

Agenda Item: 11-5
Meeting Dates: August 11 and 12, 2004

**CONSIDERATION OF A RESOLUTION APPROVING THE NOMINATIONS OF
DR. SAMUEL LUOMA AND DR. THOMAS DUNNE
TO THE INDEPENDENT SCIENCE BOARD**

Summary: This resolution would appoint Dr. Samuel Luoma and Dr. Thomas Dunne to the Independent Science Board (ISB).

Recommended Action: Staff recommends that the Authority adopt the attached Resolution 04-08-01 which would continue the tradition of appointing world-class scientific researchers to the ISB.

Background

The California Bay-Delta Authority Act states: "The Lead Scientist shall nominate, and the Authority shall establish, a board of independent scientists, to be known as the Independent Science Board, that shall advise and make recommendations to the Authority and the Bay-Delta Public Advisory Committee, as appropriate, on the science relative to the implementation of all program elements." At the August 2003 Authority meeting the nominations of the current 13 members of the ISB were approved.

The ISB was designed to be a standing board of distinguished experts (scientists and engineers) made up of individuals with a range of multi-disciplinary expertise balanced among those with local experience and those with external relevant expertise (Attachment 1). The ISB will not pass direct judgment on the success or failure of the Authority's programs, but instead provide insights that can make the science underlying those programs, the application of that science, and the technical aspects of those programs the best they can be. The additions of Dr. Samuel Luoma and Dr. Thomas Dunne will add to the expertise currently found on the ISB (Attachment 2).

Independent experts who are nominated by the Lead Scientist must have a track record of all or most of the following: scientific stature; advisory experience; technical publications; relevant knowledge; people skills; reputation for achieving balance; and interdisciplinary skills. Dr. Samuel Luoma and Dr. Thomas Dunne demonstrate all of these traits and will make excellent permanent members of the ISB.

It is expected that the ISB will grow to address additional needed expertise and that this process will occur as more programs begin to use advisory and review panels, but that the ISB will be no larger than 25 members total. The ISB as a whole will include the necessary expertise to cover the breadth of CALFED issues. Nominations will be brought before the Authority in the near future that will encompass the following disciplines:

- Economics – Environmental/Water
- Law - Environmental/Water
- Social Geography
- Risk/Decision Analysis
- Innovation and Change

Fiscal Information

Funding for the ISB is part of the CALFED Science Program budget. ISB members are compensated for their time as is standard when participating on a standing board or technical panel.

List of Attachments

Attachment 1 - Biographies of current ISB members

Attachment 2 - Biographies for Dr. Samuel Luoma and Dr. Thomas Dunne

Resolution 04-08-01

Contact

Dr. Johnnie Moore
Lead Scientist

Phone: 916-445-0463

Independent Science Board

Brief Biographies of Current Members

Ken Cummins, Ph.D

Senior Advisory Scientist, California Cooperative Fisheries Unit, and Adjunct Professor, Humboldt State University.

An expert in stream, river and wetland ecology, Dr. Cummins currently is a member of the Independent Science Board for the CALFED Ecosystem Restoration Program. He has done extensive research on aquatic ecosystems and land-water interactions, including sources and concentrations of organic carbon. He has served on several national science advisory committees and previously held the post of distinguished scientist for the South Florida Water Management District's Ecosystem Restoration Department, and is a member of the Science Advisory Board for USEPA. He earned his doctorate in zoology / limnology from the University of Michigan, Ann Arbor.

David Freyberg, Ph.D.

Associate Professor, Hydrology, Ground Water and Water Resources, Stanford University

Dr. Freyberg's research interests include subsurface hydrology, ephemeral channels and sediment management in small reservoirs. He is an expert in hydrology, hydrogeology, conjunctive use and Delta geology, and has served as a member of the Environmental Water Account review panel for the California Bay-Delta Program. He is a past chair of the National Research Council's Water Science and Technology Board, and co-author of the widely used text, *Water-Resources Engineering*. He earned his doctorate in engineering from Stanford University.

William Glaze, Ph.D.

Professor, Department of Environmental and Biomolecular Systems, Oregon Health and Science University

Current chair of the U.S. Environmental Protection Agency's Science Advisory Board, Dr. Glaze is an expert in water quality and drinking water treatment. He serves on the National Academy of Sciences Board of Environmental Studies and Toxicology, and is a former chair of EPA's Drinking Water Committee. He received his doctorate in physical chemistry from the University of Wisconsin.

Helen Ingram, Ph.D

Professor of Social Ecology, University of California, Irvine

With her research focus on water resources and equity issues, Dr. Ingram has participated in numerous science conferences and symposia convened by the California Bay-Delta Authority. She is considered an expert in environmental and water policy design and implementation, and has done extensive research into institutional change

and the impact of policy on democracy and public participation. She is a member of the National Academy of Sciences and Technology Board and, since 2001, has served on the review panel for CALFED's Environmental Water Account. She received her doctorate in public law and government from Columbia University.

Jack Keller, Ph.D.

Principal, Keller-Bleisner Engineering, and Professor Emeritus, Utah State University

A member of the National Academy of Engineering, Dr. Keller is an international advisor on agricultural water use. He is considered an expert in irrigation and water conservation, and serves as an advisor to the California Bay-Delta Authority's Water Use Efficiency Program. Dr. Keller earned his doctorate in irrigation engineering at Utah State, University.

Jeff Koseff, Ph.D.

Professor of Civil and Environmental Engineering, Stanford University

An expert in San Francisco Bay and Delta hydrodynamics, Dr. Koseff's work includes modeling and research into transport and mixing in the Bay and other natural water systems. Specific research includes bivalve feeders, phytoplankton dynamics in estuarine systems, transport and mixing in estuarine systems and coastal upwelling processes. He earned his doctorate in civil and environmental engineering from Stanford University.

John Melack, Ph.D.

Professor, Donald Bren School of Environmental Science and Management, and Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara

An international advisor on lake ecosystems, freshwater ecosystems and climate change, Dr. Melack conducts research programs in limnology, biogeochemistry and remote sensing. He serves on the National Academy of Sciences panel on geophysical and environmental data, and is an advisor to NASA on uses of remote sensing. He is a member of the In-Delta Storage Science Review Panel for the California Bay-Delta Authority. Dr. Melack earned his doctorate in biological sciences from Duke University.

Judith Meyer, Ph.D.

Distinguished Research Professor of Ecology, University of Georgia

A nationally recognized expert on aquatic ecology and rivers, Dr. Meyer is past president of the Ecological Society of America and has been Director of the River Basin Science and Policy Center at the University of Georgia. She is the 2003 recipient of the Award of Excellence in Benthic Science and chaired the Technical Selection Committee for the California Bay-Delta Program's 2002 Ecosystem Restoration Program grant selection process. She earned her doctorate at Cornell University.

Jeff Mount, Ph.D.

Professor, Department of Geology, University of California, Davis

Dr. Mount's research program focuses on the geology, geomorphology and restoration of lowland river systems. Dr. Mount is also involved in the integration of science and policy in the management of California's rivers. Author of the acclaimed book, California Rivers and Streams, Dr. Mount currently holds the Roy. J. Shlemon Endowed Chair in Applied Geosciences at UC Davis and is the Director of the UC Davis Watershed Center. He serves as a member of the California Reclamation Board and is a member of the National Academy of Sciences Committee on the Klamath River. He received his doctorate in Earth Sciences from the University of California, Santa Cruz.

Duncan Patten, Ph.D.

Research Professor, Montana State University

With expertise in plant biology and riparian ecology, Dr. Patten has conducted extensive research into ecological processes and restoration of western riparian and wetland ecosystems. He was a senior scientist with the Bureau of Reclamation's Glen Canyon Environmental Studies, overseeing research on the effects of operations of Glen Canyon Dam on the Colorado River riverine ecosystem. He has served on National Science Foundation panels, has been a member of various committees, boards, and commissions of the National Research Council and has been an officer in the Ecological Society of America. He received his doctorate from Duke University.

Denise Reed, Ph.D.

Professor, Department of Geology and Geophysics, University of New Orleans

Dr. Reed's current research focus includes sediment dynamics and wetlands restoration in the Sacramento-San Joaquin Delta, Louisiana and the Columbia River estuary. She is considered an expert in wetlands geomorphology and has helped develop restoration plans for coastal Louisiana for the past five years. Dr. Reed currently serves on the Ecosystem Restoration Program Independent Science Board for the California Bay-Delta Program. She earned her doctorate in geography from the University of Cambridge in England.

Kenneth Rose, Ph.D.

Professor, Department of Oceanography & Coastal Sciences/Coastal Fisheries Institute, Louisiana State University

With expertise in fish ecology and population models, Dr. Rose has published numerous articles and served on many national advisory panels regarding fish and water policy. His current research involves mathematical and computer modeling of aquatic populations, communities, food webs and ecosystems. In addition, Dr. Rose currently serves on the review panel for the Environmental Water Account of the CBDA. He received his doctorate from the University of Washington.

Robert Twiss, Ph.D.

Professor, Graduate Center for Environmental Design Research, University of California, Berkeley

As an expert in environmental and regional planning, Dr. Twiss has been involved in all levels of planning and research for local, regional state and Federal agencies as well as the United Nations. He serves as co-chair of the Independent Science Board for the California Bay-Delta Authority's Ecosystem Restoration Program. He also serves as consultant to the California Attorney General's Office, and is a member of the Independent Science Panel for the North Coast Regional Water Quality Control Board and Humboldt County Watersheds. He received his doctorate in conservation from the University of Michigan.

Independent Science Board

Brief Biographies of Nominees: Dr. Samuel Luoma and Dr. Thomas Dunne

Samuel Luoma, Ph.D.

Senior Research Hydrologist with the US Geological Survey

Dr. Samuel N. Luoma served as the first Lead Scientist for the CALFED Bay-Delta program between August 2000 and November 2003. As Lead Scientist he helped establish peer review, approaches to using scientific experts as advisors, a broad system of new studies relevant to CALFED, and improved the credibility and clarity of the science CALFED uses in its decisions. He is broadly interested in California water issues, ecosystem restoration and in improving uses of science in water policy decisions. His research interests include the effects of pollutants in aquatic environments, and in practical applications of adaptive management to water policy. He has worked in San Francisco Bay since 1974 and has authored more than 180 peer-reviewed publications. He wrote the textbook, *Introduction to Environmental Issues*, in 1984. He was editor of *Marine Environmental Research* from 1996 – 2003 and is an editorial advisor for the *Marine Ecology Progress Series*. He is a Fellow in the American Association for the Advancement of Science and was awarded the U. S. Department of Interior's Distinguished Service Award in 1986. He has participated nationally and internationally as an expert or advisor, including advising the USEPA's Science Advisory Board on sediment quality criteria and the NAS/National Research Council's Committee on the Bioavailability of Contaminants in Soils and Sediments. He was one of four people who originally designed USGS' successful National Water Quality Monitoring Assessment. He has advised and mentored students and postdoctoral associates from Asia, Europe, Latin America and North America. He is presently serving as a William J. Fulbright Distinguished Scholar studying "International approaches to applying "best available science" in water pollution issues" in collaboration with colleagues at the Natural History Museum in London.

Thomas Dunne, Ph.D.

Professor, Donald Bren School of Environmental Science and Management and of Geological Sciences, University of California Santa Barbara

Dr. Dunne currently studies hydrology and fluvial geomorphology in the Andes Mountains of Bolivia, the Amazon River basin of Brazil, and the Sacramento River basin. He has practiced research and consultation in many parts of the world, and expressed that experience in teaching, advising government agencies, publishing journal articles, and co-authoring two textbooks. He is a member of the National Academy of Sciences, American Academy of Arts and Sciences, and California Academy of Sciences. He served on a number of National Research Council committees, the CALFED Ecosystem Restoration Program Science Board; and chaired the University of California Committee on Prediction of Cumulative Watershed Effects. He received a doctorate in geography from the Johns Hopkins University.

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CALIFORNIA BAY-DELTA AUTHORITY
RESOLUTION 04-08-01

APPROVING THE NOMINATIONS OF
DR. SAMUEL LUOMA AND DR. THOMAS DUNNE
TO THE INDEPENDENT SCIENCE BOARD

WHEREAS, the California Bay-Delta Authority Act requires the Lead Scientist to nominate a board of independent scientists, to be known as the Independent Science Board, to provide advice and recommendations to the California Bay-Delta Authority and the Bay-Delta Public Advisory Committee on science issues related to all CALFED Program elements; and

WHEREAS, at the August 2003 Authority meeting, the nominations by the Lead Scientist of recurrent 13 members of the Independent Science Board were approved by the Authority; and

WHEREAS, the Lead Scientist has nominated Dr. Samuel Luoma and Dr. Thomas Dunne as individual experts to serve on the Independent Science Board based on, among other things, their scientific stature, advisory experience, technical publications, relevant knowledge, people skills, reputation for achieving balance, and interdisciplinary skills;

NOW, THEREFORE, BE IT RESOLVED that the California Bay-Delta Authority approves these nominees as official members of the Independent Science Board.

CERTIFICATION

The undersigned Assistant to the California Bay-Delta Authority does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the Authority held on August 11 and 12, 2004.

Dated: _____

Heidi Rooks
Assistant to the California Bay-Delta Authority